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ABSTRACT

The problems and opportunities for institutional research in academe as it becomes increasingly policy analytic in activity and orientation are explored. It is suggested that for the 1980s the most viable and dynamic role for institutional research will be in providing leaders in higher education institutions with policy-relevant knowledge in order that they may become more effective participants in the policy process. Knowledge, especially decision-relevant knowledge, is frequently confused with information. Knowledge is information that has been interpreted and about which some significance has been discovered. The knowledge-development process can be viewed as a process in which there are three distinct, but sequential stages: data, information, and knowledge. Data is defined as a discrete measurement. Information results when data are logically combined, and this process enlarges meaning within a specific context. Information is usually a direct result of some form of data processing and is almost always situation- and time-specific. Knowledge is the result of some form of research activity, and it leads to insight and understanding. It is argued that too much time and effort have been spent in producing information, and too little has been spent in analysis and interpretation. General characteristics of the policy-analytic approach are described as follows: problem-identification, alternatives-development, consequences-prediction, outcomes-evaluation, and policy-recommendation. The impact of using policy analysis in institutional research is discussed and depicted in a diagram that includes levels of operation, activity, client, purpose, and other participants. The evolution of institutional research as a profession is also briefly traced. (SW)

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POLICY ANALYSIS: THE NEW REALITY FOR INSTITUTIONAL RESEARCH

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For the 1980s the most viable and dynamic role for institutional research (IR) will be in providing institutional leaders with policy-relevant knowledge in order that they may become more effective participants in the policy process. This support function, policy analysis, will rely less on routine data gathering and reporting, while placing much greater emphasis on (a) quick and useful response to an administrator's needs for ammunition in the dialectical and political fights he must wage; (b) sensitivity to the fact that in those fights victory goes to the most powerful and/or persuasive, not necessarily the most accurate and/or equitable; (c) recognition that the rules of this game approximate the old adage, "in the alley after school, there just ain't no golden rule" more than they do accepted standards of objective research; and (d) recognition and acceptance of the fact that participation in policy analysis will involve increased risk to IR job security since there will be greater identification with certain members of the administration and a closer linkage with success and/or failure in a volatile environment.

The purpose of this paper is to explore the problems and opportunities for institutional research as it becomes increasingly policy analytic in activity and orientation.

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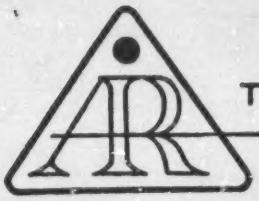


THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Second Annual Forum of the Association for Institutional Research held at the Denver Hilton Hotel in Denver, Colorado, May 16-19, 1982. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

D. R. Coleman, Chairman
Forum Publication
Advisory Committee

Evolution of IR

Recounting of the historical, continuing identity crisis of IR is, to be candid, boring and unproductive. Perhaps the reason is that these crises have not led to a useful reappraisal of the profession. Dozens of earnest, thoughtful attempts have been made to divine the essence of institutional research and/or to encourage some general agreement on what it might or should be in various higher education settings. These ideas have ranged from the quaint and naive (IR as theoretically oriented, long-term self studies conducted by offices free of demands by the host institution for information relevant to its immediate problems), to the mechanically functional (IR conducts specific studies assigned by administrators), to the grandiose (IR as the "third force" mediating between the educators and the administrators).

A review of these concepts is revealing of little that is likely to be useful for IR role-formulation in the 1980's and beyond.

Much has been made of the antiquity of IR functions (e.g., at Yale in 1701 or Harvard in the 1820's), but these early studies were specific projects of ad hoc committees and thus have little relevance to contemporary IR. Similarly, it is well known that many institution-wide self studies, usually in preparation for regional accreditation during the period 1930-1960, produced vestigial "educational research offices." But these offices, all too frequently, wound up in a school or department of education.

Led by some of the Big Ten Universities in the late 1950's, many institutions began to establish IR offices for "operations analysis" and data gathering for reporting to state and federal agencies. Coinciding with the development of computerized data processing and "management information systems," these offices became more widespread in the 1960's. The 1970's witnessed a vigorous, if unproductive, search for an identifiable role for

institutional research. Many offices tried first one, then another function, including computer operations, coordination of management information, long-range planning, etc. Perusal of the 21 Forum programs over the years suggests that the popularity of each new IR role lasted, on the average, about three or four years.

During the last two decades, institutions of higher education have experienced increasing need for data, information and, above all, useful policy and decision-relevant knowledge for administrators who have the responsibility for making crucial decisions and for promoting the best interests of the institution. When formal IR offices are unable to meet these needs, administrators must use other sources. The fortunes of many IR offices within specific institutions can be related directly to their effectiveness in the responsibility for providing useful knowledge to hard-pressed administrators who must exercise leadership in decision-making and in the policy process. In this paper a model will be developed in which a new type of role is advocated for institutional research; a role which is based on decision-making and the policy process.

In those institutions where IR has failed in its attempt to improve institutional decision-making by increasing the quantity and improving the quality of institutional information, is it really possible for institutional research to accrue a meaningful role? If so, under what criteria and by which strategies? For, this much is clear; if institutional research does not abandon its unsuccessful standard practices, then surely IR will be abandoned by the institution.

To justify its existence, institutional research must perform some service which is vital to the institution. The "purveyor role," the development and dissemination of timely and accurate information, is not such a service;

neither is self-study. These activities, while well-intentioned, are simply not very important. They are unimportant because there are no answers in data, nor in information. Much of the current disillusionment with management information systems and with institutional research can be traced directly to this proposition.

The Business of Institutional Research

Institutional research is in the knowledge business. It should always have been in the knowledge business. Its activities are research and analysis; its tools, quantitative and scientific; its grist, data and information. Its purpose is and should be the improvement of institutional decision-making; its output should be, but frequently is not, decision and policy-relevant knowledge. Unfortunately, there has been a widespread failure to understand and implement purpose and output as they apply to institutional research.

The purpose of institutional research, as previously stated, is the improvement of institutional decision-making. Better decisions are not to be confused with increases in selected dimensions of the decision-making process, i.e., objectivity, rationality, participation, equity, etc. Improved decisions are decisions which, in any given set of circumstances, maximize the best interests of the institution and/or minimize losses or damage to the institution. Such decisions may or may not be accomplished with increases in objectivity, rationality, participation, equity, etc.

The output of institutional research, the means, the only means, by which its purpose can be effectuated, is a special kind of knowledge - decision-relevant knowledge. Knowledge, especially decision-relevant knowledge, is frequently confused with information. This is a misconception which has long plagued the profession and is linked to institutional research

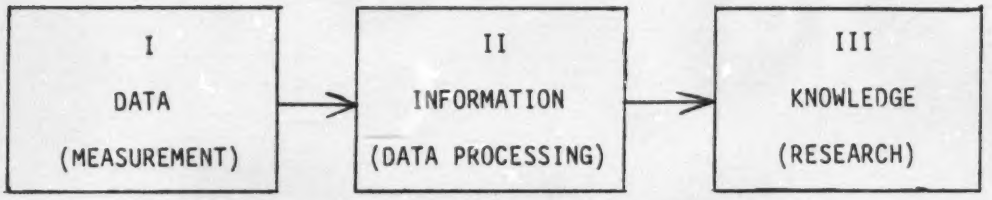
ineffectiveness over the years. Knowledge is information that has been interpreted and about which some significance has been discovered. It is with this concept, the concept of decision-relevant knowledge, that any serious reassessment of the field of institutional research should begin.

The knowledge Development Model

In order to reassess the field of institutional research, it is important that the basic relationships of, and distinctions between, the elements in the knowledge-development process be clearly understood. For this purpose, knowledge-development can be envisioned as a process in which there are three distinct, but sequential stages: (1) data, (2) information, (3) knowledge. The relationship of these elements is depicted in the following model.

Figure 1

KNOWLEDGE DEVELOPMENT MODEL



Data. The first element, data, is defined as a discrete measurement. An example of data might be an individual student enrollment, sometimes referred to as a "class detail." Measurement, in turn, is defined as the assignment of numbers to objects or events according to rules. It is by means of the measurement process that meaning, albeit narrow and restricted meaning, is created.

Data are the building blocks of information and, subsequently, of knowledge. Unfortunately, the measurement process involved in producing data

is frequently viewed as a low-level, mechanical type of activity. Consequently, the process of data development is often undernourished and neglected.

Hopefully, those who are making the measurements have an understanding of the rules by which they are to assign the numbers, and, perhaps more importantly, care about them. However, experience suggests that the problems of measurement reliability and validity will remain with us. As an example of this problem it was recently discovered at Arizona State University that student-workers at an off-campus registration site had decided as a matter of convenience to assign all registrants to the College of Liberal Arts. This was done in the belief that head-count enrollment by college "wasn't important anyway," a view not shared by the other colleges short-changed in the process.

Information. The second element in the knowledge-development model, information, results when data are logically combined in various ways. It is this process, that of manipulation and assembly of data elements, by which meaning is enlarged and made coherent. Information, then, is defined as any combination of data elements that has enlarged meaning within a specific context. Information is usually a direct result of some form of data processing and is almost always situation and time-specific.

With reference to the previous section, an example of information might be "enrollment by discipline." To develop this type of information many data elements, in this example "class details," have been combined according to previously established conventions. And, it has enlarged meaning within the specific context of a particular institution for a given academic term.

Knowledge. The third component of the model is knowledge. Knowledge is the result of some form of research activity. Usually, some process of hypothesis, analysis and synthesis is involved. Knowledge, then, is defined

as information or some combination of information about which significance has been discovered.

Knowledge leads to insight and understanding. Again with reference to the previous sections, an example of knowledge might be an interpretation of the increasing student enrollment in computer science at ASU. Such an interpretation would include national employment trends as well as local circumstances. In this case, the concentration and rapid development of the electronics and computer business enterprises in the Phoenix area would be significant.

The relevance to policy building by the institution's leaders is that this knowledge can be used to compete successfully against sister institutions for resources to develop a computer science program that will grow in response to local, regional and national needs. The knowledge provided to the institution's leaders in this competition must be based on information that is accurate, complete and timely. These qualities of the information are dependent on an adequate data base. The linkages and progression among data, information and knowledge should be obvious. It is knowledge such as this that is required for effective decision-making in the internal institutional context and for effective participation in the policy process in the external arena.

Policy Analysis

A fundamental postulate of this paper is that institutional research, as a profession, has in many institutions suffered arrested development at stage II of the knowledge-development model presented in Figure 1. Far too much time and effort has been spent in producing information; too little in analysis and interpretation. There has often been too much interest in hardware and software; too little in acquiring an understanding of the user and his/her

needs. It is very much like the triumph of technique over purpose, the law of the hammer; give a small child a hammer and he will find that everything he encounters requires pounding.

Much of this tendency, which is currently manifest in the profession, can be traced to its origins. The old ideas of self-study, of better decisions as an inevitable consequence of more and better information; encouraged our preoccupation with the development and distribution of information. And now, as we enter a period of relative resource stringency, when the old ideas have lost credibiltiy; too many of us continue to want to do it the way that it used to work.

The thesis of this paper is that the profession of Institutional Research must move toward policy analytic types of activity. For the purpose of this paper, policy analysis will be defined as any type of research activity that has as its purpose to generate and display knowledge in such a way as to improve the basis for leaders and administrators to exercise judgment and/or make more effective their participation in the processes of decision-making and policy formulation. It is unlikely that a more concise definition of policy analysis can be offered at this time. In this vein, Aaron Wildavsky (1979) has suggested that "policy analysis is an activity for which there can be no fixed program, for it is synonymous with creativity which may be stimulated by theory and sharpened by practice, and which can be learned, but not taught" (p. 3).

Unlike traditional institutional research, policy analysis is problem-oriented and decision focussed. The primary concern of policy analysis is with the structure of choice and with the analytic techniques and models that will facilitate understanding and prediction. In policy analysis there is no place for the routine generation and dissemination of information.

While policy analysis may not be amenable to precise definition, there are, nonetheless, general characteristics of the policy-analytic approach that can be identified and described. These characteristics are: (1) problem-identification, (2) alternatives-development, (3) consequences-prediction, (4) outcomes-evaluation, and (5) policy-recommendation.

Problem-Identification. At the outset of analysis the problem should be sharply defined and the objectives stated and prioritized. The context of the problem should be described and relevant variables identified. This activity should result in a problem statement which will serve as a basis for agreement between decision-maker and analyst with regard to the precise nature of the problem. The importance of this step in the policy-analytic process can not be overemphasized.

In contemporary western decision-making, according to Peter Drucker (1973, pp. 466-7), there is a tendency to give far too little attention and effort to problem-identification. It is of vital importance that both the decision-maker and the analyst have not only a sophisticated understanding of the problem, but also that they have the same understanding of the problem. Certainly a basic deficiency of conventional institutional research has been its lack of appreciation for, and involvement in, the important activity of problem-identification.

Alternatives-Development. Once the problem has been defined and elaborated, it becomes possible to develop alternative approaches to problem-solution. At this point the concern is with possible alternatives, not necessarily viable alternatives. It should also be emphasized that the potential for creative contribution to the policy analytic process is greatest at this point.

It is important to understand that policy analysis is an iterative type of activity. As analysis proceeds, frequently new information and/or insights will be developed that will require revision of earlier work. As the analyst begins to develop alternatives, his understanding and appreciation of the problem will increase. And, later, as the analysis proceeds, new alternatives may be developed. However, it is critical that time be allocated and spent, at that point, on alternatives-development; that alternatives-development not become a neglected, mechanical type of activity. Unfortunately, institutional research, as a profession has not often shown facility for this important component of policy analysis.

Consequences-Prediction. This activity can only be carried out after alternative approaches to the solution of the problem have been developed. At that point the consequences of each alternative should be predicted. Frequently, models, abstractions of a specific aspect of the real world, will be developed and utilized. If some predicted consequences are uncertain, they should be specified and probability estimates prepared.

It is important that this activity be comprehensive. All effects of the proposed alternatives should be considered; not just those which are preferred by the decision-maker. In many cases this activity will have to begin with an investigation of the techniques which are useful for predicting outcomes in areas which are unfamiliar to the analyst. Many of the more progressive offices of institutional research have experience with modeling. However, these models have usually been general in application rather than problem-focussed. Unfortunately when models have been developed independently of specific problems, they tend to be insufficiently specific and therefore not useful in policy analysis.

Outcome-Valuation. The criteria by which success is to be measured for each objective must be determined and specified. It is only by this process that alternative problem solutions can be compared. Since the proposed solutions will differ in the accomplishment of the same objectives, it is important that a means of summative evaluation be available.

A primary responsibility of the policy analyst is to assist the decision-maker to define his preference structure, or more technically, his objective function. Since an objective function is an explicit statement of weights to be assigned to each attribute that is a consequence of a proposed alternative, it becomes the means by which different combinations of valued objectives are to be compared. Implicit in this activity is the necessity for difficult and painful trade-offs to be made between valued outcomes. Unfortunately, practitioners of institutional research have little or no experience with this type of activity since they too often have been preoccupied with information-dispensing.

Policy-Recommendation. At the conclusion of the analysis the preferred alternative or alternatives should be stated in recommendation form. Care should be taken to make the recommendation lucid, brief and timely. The purpose of policy analysis is improved decision-making; the output of policy analysis must, therefore, be readily useable by the decision-maker(s). It is at the point of policy-recommendation that the weakness of conventional institutional research is put in sharpest relief. For many, if not most, institutional research people would prefer to develop and distribute information, rather than to take a position and make recommendations. In policy analysis, however, the analyst is on the line; he must take a position.

Implications for Institutional Research

The impact of a movement to a policy analysis orientation in institutional research is depicted in Figure 2.

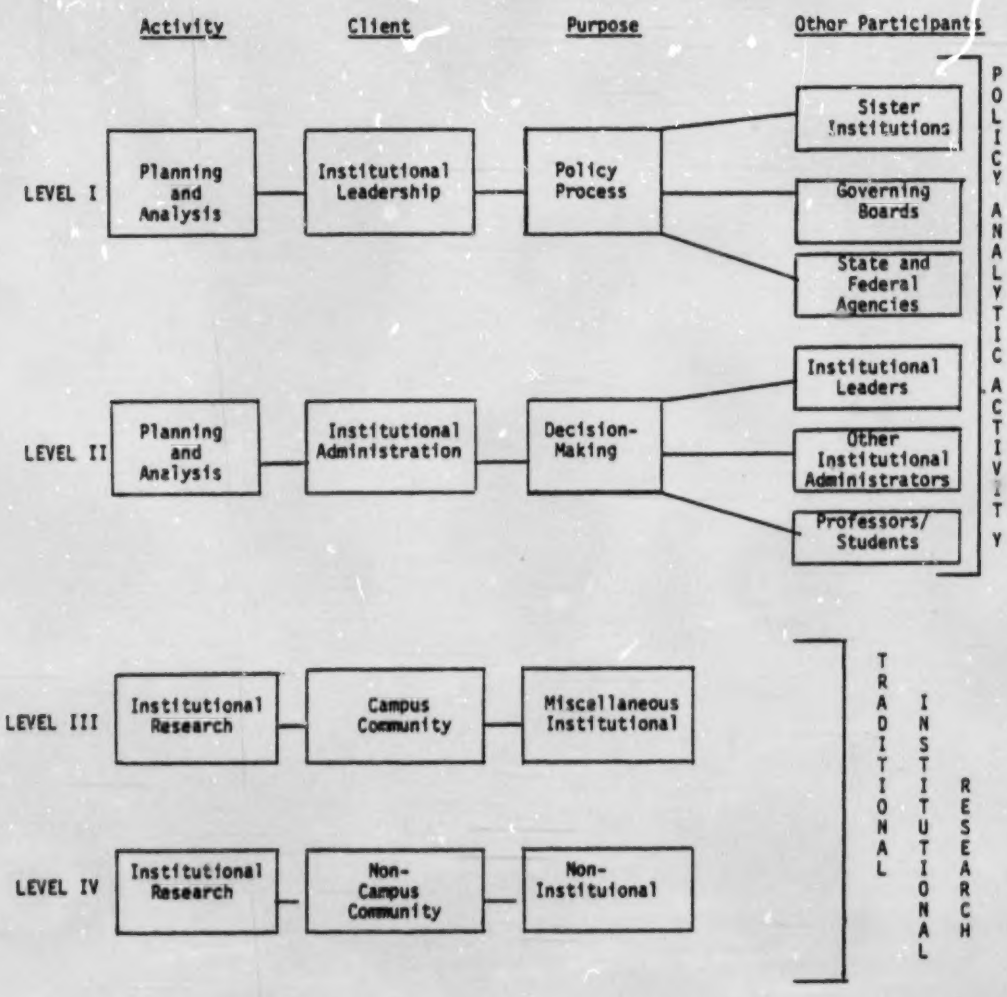
At the highest level of operation, Level I, the institutional research office works directly with the institutional leadership and the purpose of this work is to assist institutional leaders in becoming more effective in the external policy process. The policy process is viewed as a process of political bargaining in which there are several prominent participants, each with their own staff. Since effective institutional representation increases the chances for policy outcomes that favor the institution, the potential benefits of effective institutional research work are greatest at this level. It should be emphasized, however, that a favorable policy outcome from the institutional perspective is not necessarily the same as a good policy outcome from the societal perspective.

Level II refers to internal decision-making processes. The internal decision-making process also is viewed as a process of political bargaining in which there are several prominent participants. The purpose of the institutional research office at this level is to assist each of the participants in becoming an effective part of the internal decision-making process. Since this process is interactive and internal, the stronger the participants, the more dynamic the process, the better will be the quality of the decision-making outcomes. It is within the internal context that the institution is concerned with the "goodness" of the outcome; rather than with "favorableness," as was the case with the policy process in the external arena as depicted in Level I.

Levels III and IV are not directly linked to either the process of policy formulation or to the process of internal decision-making. Unlike Levels I

Figure 2

INSTITUTIONAL RESEARCH: LEVELS OF OPERATION



and II, which involve activities which are policy analytic, the lower levels of operation represent the traditional activities of institutional research. At these levels are found the routine information reporting, questionnaire responding and inquiry processing.

If the practice of institutional research can be shown to be moving from Levels III and IV to Levels I and II of operation, as depicted in Figure 2, the implications for the profession are profound:

1. routine information processing should be reassigned as a data processing function;
2. questionnaire processing should be curtailed, if not eliminated altogether, and reassigned as a data processing function;
3. ad hoc information inquiry processing should be reassigned as a data processing function;
4. the institutional research director should have the responsibility to ignore, refuse or redirect all requests that do not involve analysis and/or interpretation.

Experience has shown that the policy analytic projects tend to be ad hoc and to require data not routinely collected and stored in computer files. As a result it is often necessary to become involved in data development and in the creation of new data files. While these activities may not seem to be of the type that should be performed by institutional research specialists, the foregoing suggests that, in fact, sophisticated personnel are often required if the quality of data necessary for subsequent analysis is to be acquired. Data development activity can and frequently does require analysis and interpretation in substantial amounts. It is an activity which is indispensable in the policy analysis and one in which offices of institutional

research will have to become more involved if they are to orient more toward policy analytic types of activity.

If the criterion for success for institutional research in the 1980's is decision and policy-making relevant knowledge, then clearly the activity emphasis of the profession should be in data development and in knowledge building. The development and dissemination of information can and should be left to those who are technically competent data processors. If we anticipate that in the future we will be required more and more to deal with unstructured, non-routine problems, then not all, or even most, of the data that we will need in order to address these problems will be available in previously existing data files. Since our value will be assessed in terms of the utility of the decision and policy-making knowledge that we are able to develop, our success will depend upon versatility, creativity, and timeliness of response.

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